

10/579662

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133-PCT1-US1.ST25.txt
SEQUENCE LISTING

<110> ELENA FEINSTEIN et al.

<120> DIAGNOSIS AND TREATMENT OF KIDNEY FIBROSIS AND OTHER FIBROTIC DISEASE

<130> 71541-A-PCT-US; 133/PCT1-US1

<140> Not Yet Known

<140> Herethwith

<150> 60/520,935

<151> 2003-11-17

<150> PCT/IL 2004/001049

<151> 2004-11-16

<160> 8

<170> PatentIn version 3.2

<210> 1

<211> 3225

<212> DNA

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Leu His Phe Glu Gly Glu Glu Val Asp Tyr Asp Val Ser Pro Ser Asp	
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Gln Gly Phe Lys Glu Pro Asn Ile Gln Thr Tyr Leu Ser Gly Cys Pro	
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Ile Lys Ala Gln Val Leu Glu Val Glu Arg Phe Thr Ser Thr Thr Arg	
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Thr Gly Gly Gly Asn Ala Leu Gln Ala Ile Met His Phe Asn Tyr Arg	
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acc atg tgc aga gga gaa aat tcc atc ctt gga cag tta aaa gca gag	2592
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Val Ile Val Gln Asp Thr Glu Thr Val Pro Ser Val Met Asp Gly Lys	
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Ile Lys Ala Gln Val Leu Glu Val Glu Arg Phe Thr Ser Thr Thr Arg
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Val Pro Ser Ile Asn Leu Tyr Thr Ile Glu Leu Thr His Gly Glu Phe
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Lys Trp Gln Val Lys Arg Lys Phe Lys His Phe Gln Glu Phe His Arg
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175

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Met Ile Met Lys Arg Ser Gly Gly His Arg Ile Pro Gly Leu Asn Cys
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Cys Gly Gln Gly Arg Ala Cys Tyr Arg Trp Ser Lys Arg Trp Leu Ile
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Val Lys Asp Ser Phe Leu Leu Tyr Met Lys Pro Asp Ser Gly Ala Ile
 260 265 270

Ala Phe Val Leu Leu Val Asp Lys Glu Phe Lys Ile Lys Val Gly Lys
 275 280 285

Lys Glu Thr Glu Thr Lys Tyr Gly Ile Arg Ile Asp Asn Leu Ser Arg
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Thr Leu Ile Leu Lys Cys Asn Ser Tyr Arg His Ala Arg Trp Trp Gly
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Gly Ala Ile Glu Glu Phe Ile Gln Lys His Gly Thr Asn Phe Leu Lys
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 Arg His Pro Asp His Val Ser Ser Thr Val Tyr Leu Trp Ala His His
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 Asp Leu Ala Tyr Gly Arg Trp Asp Asp Asn Glu His Arg Leu Thr Asp
 485 490 495
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 Pro Pro Ala Ala Met Glu Ser Met Glu Ser Leu Arg Leu Lys Asp Lys
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 Asn Glu Pro Val Gln Asn Leu Pro Ile Gln Lys Ser Ile Asp Asp Val
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 Asp Ser Lys Leu Lys Gly Ile Gly Lys Pro Arg Lys Phe Ser Lys Phe
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 Ser Leu Tyr Lys Gln Leu His Arg His His Leu His Asp Ala Asp Ser
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 Ile Ser Ser Ile Asp Ser Thr Ser Ser Tyr Phe Asn His Tyr Arg Ser
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 His His Asn Leu Ile His Gly Leu Lys Pro His Phe Lys Leu Phe His
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 Pro Ser Ser Glu Ser Glu Gln Gly Leu Thr Arg Pro His Ala Asp Thr
 610 615 620
 Gly Ser Ile Arg Ser Leu Gln Thr Gly Val Gly Glu Leu His Gly Glu
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Thr Arg Phe Trp His Gly Lys Asp Tyr Cys Asn Phe Val Phe Lys Asp
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Trp Val Gln Leu Asp Lys Pro Phe Ala Asp Phe Ile Asp Arg Tyr Ser
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675 680 685

Ala Ala Arg Asp Val Ala Arg His Phe Ile Gln Arg Trp Asn Phe Thr
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Pro Lys Ser Gln Thr Thr Ala His Glu Leu Arg Tyr Gln Val Pro Gly
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Ser Val His Ala Asn Val Gln Leu Leu Arg Ser Ala Ala Asp Trp Ser
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Ala Gly Ile Lys Tyr His Glu Glu Ser Ile His Ala Ala Tyr Val His
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Val Ile Glu Asn Ser Arg His Tyr Ile Tyr Ile Glu Asn Gln Phe Phe
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Val Tyr Val Val Ile Pro Leu Leu Pro Gly Phe Glu Gly Asp Ile Ser
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Val Ile Val Gln Asp Thr Glu Thr Val Pro Ser Val Met Asp Gly Lys
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995 1000 1005

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Val Leu Ala Lys Glu Asp Pro Ile Arg Ala Glu Glu Glu Leu Lys
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Ser Trp Thr Thr Lys Lys Lys Tyr Arg His Phe Gln Glu Leu His Arg	
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Phe Ala Val Ala Tyr Ser Pro Ala Arg Asp Ala Gly Asn Arg Glu Met	
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Ser Lys Gln Lys Tyr Leu Glu Asn Tyr Leu Asn Cys Leu Leu Thr Met	
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tct ttc tat cgc aac tac cat gcc atg aca gag ttc ctg gaa gtc agt	576
Ser Phe Tyr Arg Asn Tyr His Ala Met Thr Glu Phe Leu Glu Val Ser	
180 185 190	
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Gly	Arg	Asp	Gln	Val	Cys	Tyr	Arg	Trp	Ser	Lys	Arg	Trp	Leu	Val	Val	240	
225					230					235							
aag	gac	tcc	ttc	ctg	ctg	tac	atg	tgc	ctc	gag	aca	ggg	gcc	atc	tca	768	
Lys	Asp	Ser	Phe	Leu	Leu	Tyr	Met	Cys	Leu	Glu	Thr	Gly	Ala	Ile	Ser	255	
				245					250					255			
ttt	gtt	cag	ctc	ttt	gac	cct	ggc	ttt	gag	gtg	caa	gtg	ggg	aaa	agg	816	
Phe	Val	Gln	Leu	Phe	Asp	Pro	Gly	Phe	Glu	Val	Gln	Val	Gly	Lys	Arg	270	
			260					265									
agc	acg	gag	gca	cgg	cac	ggc	gtg	cgg	atc	gat	acc	tcc	cac	agg	tcc	864	
Ser	Thr	Glu	Ala	Arg	His	Gly	Val	Arg	Ile	Asp	Thr	Ser	His	Arg	Ser	285	
		275					280					285					
ttg	att	ctc	aag	tgc	agc	agc	tac	cgg	cag	gca	cgg	tgg	tgg	gcc	caa	912	
Leu	Ile	Leu	Lys	Cys	Ser	Ser	Tyr	Arg	Gln	Ala	Arg	Trp	Trp	Ala	Gln	300	
	290					295											
gag	atc	act	gag	ctg	gca	cag	ggc	cca	ggc	aga	gac	ttc	cta	cag	ctg	960	
Glu	Ile	Thr	Glu	Leu	Ala	Gln	Gly	Pro	Gly	Arg	Asp	Phe	Leu	Gln	Leu	320	
305					310					315							
cac	cgg	cat	gac	agc	tac	gcc	cca	ccc	cgg	cct	ggg	acc	ttg	gcc	cgg	1008	
His	Arg	His	Asp	Ser	Tyr	Ala	Pro	Pro	Arg	Pro	Gly	Thr	Leu	Ala	Arg	335	
				325					330					335			
tgg	ttt	gtg	aat	ggg	gca	ggt	tac	ttt	gct	gct	gtg	gca	gat	gcc	atc	1056	
Trp	Phe	Val	Asn	Gly	Ala	Gly	Tyr	Phe	Ala	Ala	Val	Ala	Asp	Ala	Ile	350	
			340					345						350			
ctt	cga	gct	caa	gag	gag	att	ttc	atc	aca	gac	tgg	tgg	ttg	agt	cct	1104	
Leu	Arg	Ala	Gln	Glu	Glu	Ile	Phe	Ile	Thr	Asp	Trp	Trp	Leu	Ser	Pro	365	
			355				360										
gag	gtt	tac	ctg	aag	cgt	ccg	gcc	cat	tca	gat	gac	tgg	aga	ctg	gac	1152	
Glu	Val	Tyr	Leu	Lys	Arg	Pro	Ala	His	Ser	Asp	Asp	Trp	Arg	Leu	Asp	380	
	370					375											
att	atg	ctc	aag	agg	aag	gcg	gag	gaa	ggt	gtc	cgt	gtg	tct	att	ctg	1200	
Ile	Met	Leu	Lys	Arg	Lys	Ala	Glu	Glu	Gly	Val	Arg	Val	Ser	Ile	Leu	400	
385					390					395							
ctg	ttt	aaa	gaa	gtg	gaa	ttg	gcc	ttg	ggc	atc	aac	agt	ggc	tat	agc	1248	
Leu	Phe	Lys	Glu	Val	Glu	Leu	Ala	Leu	Gly	Ile	Asn	Ser	Gly	Tyr	Ser	415	
				405					410								
aag	agg	gcg	ctg	atg	ctg	ctg	cac	ccc	aac	ata	aag	gtg	atg	cgt	cac	1296	
Lys	Arg	Ala	Leu	Met	Leu	Leu	His	Pro	Asn	Ile	Lys	Val	Met	Arg	His	430	
			420					425									
cca	gac	caa	gtg	acg	ttg	tgg	gcc	cat	cat	gag	aag	ctc	ctg	gtg	gtg	1344	
Pro	Asp	Gln	Val	Thr	Leu	Trp	Ala	His	His	Glu	Lys	Leu	Leu	Val	Val	445	
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gac	caa	gtg	gta	gca	ttc	ctg	ggg	gga	ctg	gac	ctt	gcc	tat	ggc	cgc	1392
Asp	Gln	Val	Val	Ala	Phe	Leu	Gly	Gly	Leu	Asp	Leu	Ala	Tyr	Gly	Arg	
	450					455					460					
tgg	gat	gac	ctg	cac	tac	cga	ctg	act	gac	ctt	gga	gac	tcc	tct	gaa	1440
Trp	Asp	Asp	Leu	His	Tyr	Arg	Leu	Thr	Asp	Leu	Gly	Asp	Ser	Ser	Glu	
465					470					475					480	
tca	gct	gcc	tcc	cag	cct	ccc	acc	ccg	cgc	cca	gac	tca	cca	gcc	acc	1488
Ser	Ala	Ala	Ser	Gln	Pro	Pro	Thr	Pro	Arg	Pro	Asp	Ser	Pro	Ala	Thr	
				485					490					495		
cca	gac	ctc	tct	cac	aac	caa	ttc	ttc	tgg	ctg	ggc	aag	gac	tac	agc	1536
Pro	Asp	Leu	Ser	His	Asn	Gln	Phe	Phe	Trp	Leu	Gly	Lys	Asp	Tyr	Ser	
			500					505					510			
aat	ctt	atc	acc	aag	gac	tgg	gtg	cag	ctg	gac	cgg	cct	ttc	gaa	gat	1584
Asn	Leu	Ile	Thr	Lys	Asp	Trp	Val	Gln	Leu	Asp	Arg	Pro	Phe	Glu	Asp	
		515					520					525				
ttc	att	gac	agg	gag	acg	acc	cct	cgg	atg	cca	tgg	cgg	gac	gtt	ggg	1632
Phe	Ile	Asp	Arg	Glu	Thr	Thr	Pro	Arg	Met	Pro	Trp	Arg	Asp	Val	Gly	
	530					535					540					
gtg	gtc	gtc	cat	ggc	cta	ccg	gcc	cgg	gac	ctt	gcc	cgg	cac	ttc	atc	1680
Val	Val	Val	His	Gly	Leu	Pro	Ala	Arg	Asp	Leu	Ala	Arg	His	Phe	Ile	
545					550					555					560	
cag	cgc	tgg	aac	ttc	acc	aag	acc	acc	aag	gcc	aag	tac	aag	act	ccc	1728
Gln	Arg	Trp	Asn	Phe	Thr	Lys	Thr	Thr	Lys	Ala	Lys	Tyr	Lys	Thr	Pro	
				565					570					575		
ata	tac	ccc	tac	ctg	ctt	ccc	aag	tct	acc	agc	acg	gcc	aat	cag	ctc	1776
Ile	Tyr	Pro	Tyr	Leu	Leu	Pro	Lys	Ser	Thr	Ser	Thr	Ala	Asn	Gln	Leu	
			580					585					590			
ccc	ttc	aca	ctt	cca	gga	ggg	cag	tgc	acc	acc	gta	cag	gtc	ttg	cga	1824
Pro	Phe	Thr	Leu	Pro	Gly	Gly	Gln	Cys	Thr	Thr	Val	Gln	Val	Leu	Arg	
		595					600					605				
tca	gtg	gac	cgc	tgg	tca	gca	ggg	act	ctg	gag	aac	tcc	atc	ctc	aat	1872
Ser	Val	Asp	Arg	Trp	Ser	Ala	Gly	Thr	Leu	Glu	Asn	Ser	Ile	Leu	Asn	
	610					615					620					
gcc	tac	ctg	cac	acc	atc	agg	gag	agc	cag	cac	ttc	ctc	tac	att	gag	1920
Ala	Tyr	Leu	His	Thr	Ile	Arg	Glu	Ser	Gln	His	Phe	Leu	Tyr	Ile	Glu	
625					630					635					640	
aat	cag	ttc	ttc	att	agc	tgc	tca	gat	ggg	cgg	acg	gtt	ctg	aac	aag	1968
Asn	Gln	Phe	Phe	Ile	Ser	Cys	Ser	Asp	Gly	Arg	Thr	Val	Leu	Asn	Lys	
				645					650					655		
gtg	ggc	gat	gag	att	gtg	gac	aga	atc	ctg	aag	gcc	cac	aaa	cag	ggg	2016
Val	Gly	Asp	Glu	Ile	Val	Asp	Arg	Ile	Leu	Lys	Ala	His	Lys	Gln	Gly	
			660					665					670			
tgg	tgt	tac	cga	gtc	tac	gtg	ctt	ttg	ccc	tta	ctc	cct	ggc	ttc	gag	2064
Trp	Cys	Tyr	Arg	Val	Tyr	Val	Leu	Leu	Pro	Leu	Leu	Pro	Gly	Phe	Glu	
		675					680					685				

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ggt gac atc tcc acg ggc ggt ggc aac tcc atc cag gcc att ctg cac Gly Asp Ile Ser Thr Gly Gly Gly Asn Ser Ile Gln Ala Ile Leu His 690 695 700	2112
ttt act tac agg acc ctg tgt cgt ggg gag tat tca atc ctg cat cgc Phe Thr Tyr Arg Thr Leu Cys Arg Gly Glu Tyr Ser Ile Leu His Arg 705 710 715 720	2160
ctt aaa gca gcc atg ggg aca gca tgg cgg gac tat att tcc atc tgc Leu Lys Ala Ala Met Gly Thr Ala Trp Arg Asp Tyr Ile Ser Ile Cys 725 730 735	2208
ggg ctt cgt aca cac gga gag ctg ggc ggg cac ccc gtc tgc gag ctc Gly Leu Arg Thr His Gly Glu Leu Gly Gly His Pro Val Ser Glu Leu 740 745 750	2256
atc tac atc cac agc aag gtg ctc atc gca gat gac cgg aca gtc atc Ile Tyr Ile His Ser Lys Val Leu Ile Ala Asp Asp Arg Thr Val Ile 755 760 765	2304
att ggt tct gca aac atc aat gac cgg agc ttg ctg ggg aag cgg gac Ile Gly Ser Ala Asn Ile Asn Asp Arg Ser Leu Leu Gly Lys Arg Asp 770 775 780	2352
agt gag ctg gcc gtg ctg atc gag gac aca gag acg gaa cca tcc ctc Ser Glu Leu Ala Val Leu Ile Glu Asp Thr Glu Thr Glu Pro Ser Leu 785 790 795 800	2400
atg aat ggg gca gag tat cag gcg ggc agg ttt gcc ttg agt ctg cgg Met Asn Gly Ala Glu Tyr Gln Ala Gly Arg Phe Ala Leu Ser Leu Arg 805 810 815	2448
aag cac tgc ttc ggt gtg att ctt gga gca aat acc cgg cca gac ttg Lys His Cys Phe Gly Val Ile Leu Gly Ala Asn Thr Arg Pro Asp Leu 820 825 830	2496
gat ctc cga gac ccc atc tgt gat gac ttc ttc cag ttg tgg caa gac Asp Leu Arg Asp Pro Ile Cys Asp Asp Phe Phe Gln Leu Trp Gln Asp 835 840 845	2544
atg gct gag agc aac gcc aat atc tat gag cag atc ttc cgc tgc ctg Met Ala Glu Ser Asn Ala Asn Ile Tyr Glu Gln Ile Phe Arg Cys Leu 850 855 860	2592
cca tcc aat gcc acg cgt tcc ctg cgg act ctc cgg gag tac gtg gcc Pro Ser Asn Ala Thr Arg Ser Leu Arg Thr Leu Arg Glu Tyr Val Ala 865 870 875 880	2640
gtg gag ccc ttg gcc acg gtc agt ccc ccc ttg gct cgg tct gag ctc Val Glu Pro Leu Ala Thr Val Ser Pro Pro Leu Ala Arg Ser Glu Leu 885 890 895	2688
acc cag gtc cag ggc cac ctg gtc cac ttc ccc ctc aag ttc cta gag Thr Gln Val Gln Gly His Leu Val His Phe Pro Leu Lys Phe Leu Glu 900 905 910	2736
gat gag tct ttg ctg ccc ccg ctg ggt agc aag gag ggc atg atc ccc Asp Glu Ser Leu Leu Pro Pro Leu Gly Ser Lys Glu Gly Met Ile Pro 915 920 925 930	2784

915

920

925

2802

cta gaa gtg tgg aca tag
 Leu Glu Val Trp Thr
 930

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 <212> PRT
 <213> Homo sapiens

<400> 4

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Ser Ser Gln Leu Gln Met Glu Ser Asp Glu Val Asp Thr Leu Lys Glu
 20 25 30

Gly Glu Asp Pro Ala Asp Arg Met His Pro Phe Leu Ala Ile Tyr Glu
 35 40 45

Leu Gln Ser Leu Lys Val His Pro Leu Val Phe Ala Pro Gly Val Pro
 50 55 60

Val Thr Ala Gln Val Val Gly Thr Glu Arg Tyr Thr Ser Gly Ser Lys
 65 70 75 80

Val Gly Thr Cys Thr Leu Tyr Ser Val Arg Leu Thr His Gly Asp Phe
 85 90 95

Ser Trp Thr Thr Lys Lys Lys Tyr Arg His Phe Gln Glu Leu His Arg
 100 105 110

Asp Leu Leu Arg His Lys Val Leu Met Ser Leu Leu Pro Leu Ala Arg
 115 120 125

Phe Ala Val Ala Tyr Ser Pro Ala Arg Asp Ala Gly Asn Arg Glu Met
 130 135 140

Pro Ser Leu Pro Arg Ala Gly Pro Glu Gly Ser Thr Arg His Ala Ala
 145 150 155 160

Ser Lys Gln Lys Tyr Leu Glu Asn Tyr Leu Asn Cys Leu Leu Thr Met
 165 170 175

Ser Phe Tyr Arg Asn Tyr His Ala Met Thr Glu Phe Leu Glu Val Ser

180

185

190

Gln Leu Ser Phe Ile Pro Asp Leu Gly Arg Lys Gly Leu Glu Gly Met
 195 200 205

Ile Arg Lys Arg Ser Gly Gly His Arg Val Pro Gly Leu Thr Cys Cys
 210 215 220

Gly Arg Asp Gln Val Cys Tyr Arg Trp Ser Lys Arg Trp Leu Val Val
 225 230 235 240

Lys Asp Ser Phe Leu Leu Tyr Met Cys Leu Glu Thr Gly Ala Ile Ser
 245 250 255

Phe Val Gln Leu Phe Asp Pro Gly Phe Glu Val Gln Val Gly Lys Arg
 260 265 270

Ser Thr Glu Ala Arg His Gly Val Arg Ile Asp Thr Ser His Arg Ser
 275 280 285

Leu Ile Leu Lys Cys Ser Ser Tyr Arg Gln Ala Arg Trp Trp Ala Gln
 290 295 300

Glu Ile Thr Glu Leu Ala Gln Gly Pro Gly Arg Asp Phe Leu Gln Leu
 305 310 315 320

His Arg His Asp Ser Tyr Ala Pro Pro Arg Pro Gly Thr Leu Ala Arg
 325 330 335

Trp Phe Val Asn Gly Ala Gly Tyr Phe Ala Ala Val Ala Asp Ala Ile
 340 345 350

Leu Arg Ala Gln Glu Glu Ile Phe Ile Thr Asp Trp Trp Leu Ser Pro
 355 360 365

Glu Val Tyr Leu Lys Arg Pro Ala His Ser Asp Asp Trp Arg Leu Asp
 370 375 380

Ile Met Leu Lys Arg Lys Ala Glu Glu Gly Val Arg Val Ser Ile Leu
 385 390 395 400

Leu Phe Lys Glu Val Glu Leu Ala Leu Gly Ile Asn Ser Gly Tyr Ser
 405 410 415

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Lys Arg Ala Leu Met Leu Leu His Pro Asn Ile Lys Val Met Arg His
 420 425 430

Pro Asp Gln Val Thr Leu Trp Ala His His Glu Lys Leu Leu Val Val
 435 440 445

Asp Gln Val Val Ala Phe Leu Gly Gly Leu Asp Leu Ala Tyr Gly Arg
 450 455 460

Trp Asp Asp Leu His Tyr Arg Leu Thr Asp Leu Gly Asp Ser Ser Glu
 465 470 475 480

Ser Ala Ala Ser Gln Pro Pro Thr Pro Arg Pro Asp Ser Pro Ala Thr
 485 490 495

Pro Asp Leu Ser His Asn Gln Phe Phe Trp Leu Gly Lys Asp Tyr Ser
 500 505 510

Asn Leu Ile Thr Lys Asp Trp Val Gln Leu Asp Arg Pro Phe Glu Asp
 515 520 525

Phe Ile Asp Arg Glu Thr Thr Pro Arg Met Pro Trp Arg Asp Val Gly
 530 535 540

Val Val Val His Gly Leu Pro Ala Arg Asp Leu Ala Arg His Phe Ile
 545 550 555 560

Gln Arg Trp Asn Phe Thr Lys Thr Thr Lys Ala Lys Tyr Lys Thr Pro
 565 570 575

Ile Tyr Pro Tyr Leu Leu Pro Lys Ser Thr Ser Thr Ala Asn Gln Leu
 580 585 590

Pro Phe Thr Leu Pro Gly Gly Gln Cys Thr Thr Val Gln Val Leu Arg
 595 600 605

Ser Val Asp Arg Trp Ser Ala Gly Thr Leu Glu Asn Ser Ile Leu Asn
 610 615 620

Ala Tyr Leu His Thr Ile Arg Glu Ser Gln His Phe Leu Tyr Ile Glu
 625 630 635 640

Asn Gln Phe Phe Ile Ser Cys Ser Asp Gly Arg Thr Val Leu Asn Lys
 645 650 655

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Val Gly Asp Glu Ile Val Asp Arg Ile Leu Lys Ala His Lys Gln Gly
660 665 670

Trp Cys Tyr Arg Val Tyr Val Leu Leu Pro Leu Leu Pro Gly Phe Glu
675 680 685

Gly Asp Ile Ser Thr Gly Gly Gly Asn Ser Ile Gln Ala Ile Leu His
690 695 700

Phe Thr Tyr Arg Thr Leu Cys Arg Gly Glu Tyr Ser Ile Leu His Arg
705 710 715 720

Leu Lys Ala Ala Met Gly Thr Ala Trp Arg Asp Tyr Ile Ser Ile Cys
725 730 735

Gly Leu Arg Thr His Gly Glu Leu Gly Gly His Pro Val Ser Glu Leu
740 745 750

Ile Tyr Ile His Ser Lys Val Leu Ile Ala Asp Asp Arg Thr Val Ile
755 760 765

Ile Gly Ser Ala Asn Ile Asn Asp Arg Ser Leu Leu Gly Lys Arg Asp
770 775 780

Ser Glu Leu Ala Val Leu Ile Glu Asp Thr Glu Thr Glu Pro Ser Leu
785 790 795 800

Met Asn Gly Ala Glu Tyr Gln Ala Gly Arg Phe Ala Leu Ser Leu Arg
805 810 815

Lys His Cys Phe Gly Val Ile Leu Gly Ala Asn Thr Arg Pro Asp Leu
820 825 830

Asp Leu Arg Asp Pro Ile Cys Asp Asp Phe Phe Gln Leu Trp Gln Asp
835 840 845

Met Ala Glu Ser Asn Ala Asn Ile Tyr Glu Gln Ile Phe Arg Cys Leu
850 855 860

Pro Ser Asn Ala Thr Arg Ser Leu Arg Thr Leu Arg Glu Tyr Val Ala
865 870 875 880

Val Glu Pro Leu Ala Thr Val Ser Pro Pro Leu Ala Arg Ser Glu Leu
885 890 895

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Thr Gln Val Gln Gly His Leu Val His Phe Pro Leu Lys Phe Leu Glu
 900 905 910

Asp Glu Ser Leu Leu Pro Pro Leu Gly Ser Lys Glu Gly Met Ile Pro
 915 920 925

Leu Glu Val Trp Thr
 930

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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1473)

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 Met Lys Pro Lys Leu Met Tyr Gln Glu Leu Lys Val Pro Ala Glu Glu
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 ccc gcc aat gag ctg ccc atg aat gag att gag gcg tgg aag gct gcg 96
 Pro Ala Asn Glu Leu Pro Met Asn Glu Ile Glu Ala Trp Lys Ala Ala
 20 25 30
 gaa aag aaa gcc cgc tgg gtc ctg ctg gtc ctc att ctg gcg gtt gtg 144
 Glu Lys Lys Ala Arg Trp Val Leu Leu Val Leu Ile Leu Ala Val Val
 35 40 45
 ggc ttc gga gcc ctg atg act cag ctg ttt cta tgg gaa tac ggc gac 192
 Gly Phe Gly Ala Leu Met Thr Gln Leu Phe Leu Trp Glu Tyr Gly Asp
 50 55 60
 ttg cat ctc ttt ggg ccc aac cag cgc cca gcc ccc tgc tat gac cct 240
 Leu His Leu Phe Gly Pro Asn Gln Arg Pro Ala Pro Cys Tyr Asp Pro
 65 70 75 80
 tgc gaa gca gtg ctg gtg gaa agc att cct gag ggc ctg gac ttc ccc 288
 Cys Glu Ala Val Leu Val Glu Ser Ile Pro Glu Gly Leu Asp Phe Pro
 85 90 95
 aat gcc tcc acg ggg aac cct tcc acc agc cag gcc tgg ctg ggc ctg 336
 Asn Ala Ser Thr Gly Asn Pro Ser Thr Ser Gln Ala Trp Leu Gly Leu
 100 105 110
 ctc gcc ggt gcg cac agc agc ctg gac atc gcc tcc ttc tac tgg acc 384
 Leu Ala Gly Ala His Ser Ser Leu Asp Ile Ala Ser Phe Tyr Trp Thr
 115 120 125
 ctc acc aac aat gac acc cac acg cag gag ccc tct gcc cag cag ggt 432
 Leu Thr Asn Asn Asp Thr His Thr Gln Glu Pro Ser Ala Gln Gln Gly

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130	135	140	
gag gag gtc ctc cgg cag ctg cag acc ctg gca cca aag ggc gtg aac Glu Glu Val Leu Arg Gln Leu Gln Thr Leu Ala Pro Lys Gly Val Asn 145 150 155 160			480
gtc cgc atc gct gtg agc aag ccc agc ggg ccc cag cca cag gcg gac Val Arg Ile Ala Val Ser Lys Pro Ser Gly Pro Gln Pro Gln Ala Asp 165 170 175			528
ctg cag gct ctg ctg cag agc ggt gcc cag gtc cgc atg gtg gac atg Leu Gln Ala Leu Leu Gln Ser Gly Ala Gln Val Arg Met Val Asp Met 180 185 190			576
cag aag ctg acc cat ggc gtc ctg cat acc aag ttc tgg gtg gtg gac Gln Lys Leu Thr His Gly Val Leu His Thr Lys Phe Trp Val Val Asp 195 200 205			624
cag acc cac ttc tac ctg ggc agt gcc aac atg gac tgg cgt tca ctg Gln Thr His Phe Tyr Leu Gly Ser Ala Asn Met Asp Trp Arg Ser Leu 210 215 220			672
acc cag gtc aag gag ctg ggc gtg gtc atg tac aac tgc agc tgc ctg Thr Gln Val Lys Glu Leu Gly Val Val Met Tyr Asn Cys Ser Cys Leu 225 230 235 240			720
gct cga gac ctg acc aag atc ttt gag gcc tac tgg ttc ctg ggc cag Ala Arg Asp Leu Thr Lys Ile Phe Glu Ala Tyr Trp Phe Leu Gly Gln 245 250 255			768
gca ggc agc tcc atc cca tca act tgg ccc cgg ttc tat gac acc cgc Ala Gly Ser Ser Ile Pro Ser Thr Trp Pro Arg Phe Tyr Asp Thr Arg 260 265 270			816
tac aac caa gag aca cca atg gag atc tgc ctc aat gga acc cct gct Tyr Asn Gln Glu Thr Pro Met Glu Ile Cys Leu Asn Gly Thr Pro Ala 275 280 285			864
ctg gcc tac ctg gcg agt gcg ccc cca ccc ctg tgt cca agt ggc cgc Leu Ala Tyr Leu Ala Ser Ala Pro Pro Pro Leu Cys Pro Ser Gly Arg 290 295 300			912
act cca gac ctg aag gct cta ctc aac gtg gtg gac aat gcc cgg agt Thr Pro Asp Leu Lys Ala Leu Leu Asn Val Val Asp Asn Ala Arg Ser 305 310 315 320			960
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cac cct cac agg ttc tgg cct gcc att gac gat ggg ctg cgg cgg gcc His Pro His Arg Phe Trp Pro Ala Ile Asp Asp Gly Leu Arg Arg Ala 340 345 350			1056
acc tac gag cgt ggc gtc aag gtg cgc ctg ctc atc agc tgc tgg gga Thr Tyr Glu Arg Gly Val Lys Val Arg Leu Leu Ile Ser Cys Trp Gly 355 360 365			1104
cac tcg gag cca tcc atg cgg gcc ttc ctg ctc tct ctg gct gcc ctg			1152

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His Ser Glu Pro Ser Met Arg Ala Phe Leu Leu Ser Leu Ala Ala Leu
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 cgt gac aac cat acc cac tct gac atc cag gtg aaa ctc ttt gtg gtc 1200
 Arg Asp Asn His Thr His Ser Asp Ile Gln Val Lys Leu Phe Val Val
 385 390 395 400
 ccc gcg gat gag gcc cag gct cga atc cca tat gcc cgt gtc aac cac 1248
 Pro Ala Asp Glu Ala Gln Ala Arg Ile Pro Tyr Ala Arg Val Asn His
 405 410 415
 aac aag tac atg gtg act gaa cgc gcc acc tac atc gga acc tcc aac 1296
 Asn Lys Tyr Met Val Thr Glu Arg Ala Thr Tyr Ile Gly Thr Ser Asn
 420 425 430
 tgg tct ggc aac tac ttc acg gag acg gcg ggc acc tcg ctg ctg gtg 1344
 Trp Ser Gly Asn Tyr Phe Thr Glu Thr Ala Gly Thr Ser Leu Leu Val
 435 440 445
 acg cag aat ggg agg ggc ggc ctg cgg agc cag ctg gag gcc att ttc 1392
 Thr Gln Asn Gly Arg Gly Gly Leu Arg Ser Gln Leu Glu Ala Ile Phe
 450 455 460
 ctg agg gac tgg gac tcc cct tac agc cat gac ctt gac acc tca gct 1440
 Leu Arg Asp Trp Asp Ser Pro Tyr Ser His Asp Leu Asp Thr Ser Ala
 465 470 475 480
 gac agc gtg ggc aac gcc tgc cgc ctg ctc tga 1473
 Asp Ser Val Gly Asn Ala Cys Arg Leu Leu
 485 490

<210> 6
 <211> 490
 <212> PRT
 <213> Homo sapiens

<400> 6

Met Lys Pro Lys Leu Met Tyr Gln Glu Leu Lys Val Pro Ala Glu Glu
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 Pro Ala Asn Glu Leu Pro Met Asn Glu Ile Glu Ala Trp Lys Ala Ala
 20 25 30
 Glu Lys Lys Ala Arg Trp Val Leu Leu Val Leu Ile Leu Ala Val Val
 35 40 45
 Gly Phe Gly Ala Leu Met Thr Gln Leu Phe Leu Trp Glu Tyr Gly Asp
 50 55 60
 Leu His Leu Phe Gly Pro Asn Gln Arg Pro Ala Pro Cys Tyr Asp Pro
 65 70 75 80

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Cys Glu Ala Val Leu Val Glu Ser Ile Pro Glu Gly Leu Asp Phe Pro
 85 90 95

Asn Ala Ser Thr Gly Asn Pro Ser Thr Ser Gln Ala Trp Leu Gly Leu
 100 105 110

Leu Ala Gly Ala His Ser Ser Leu Asp Ile Ala Ser Phe Tyr Trp Thr
 115 120 125

Leu Thr Asn Asn Asp Thr His Thr Gln Glu Pro Ser Ala Gln Gln Gly
 130 135 140

Glu Glu Val Leu Arg Gln Leu Gln Thr Leu Ala Pro Lys Gly Val Asn
 145 150 155 160

Val Arg Ile Ala Val Ser Lys Pro Ser Gly Pro Gln Pro Gln Ala Asp
 165 170 175

Leu Gln Ala Leu Leu Gln Ser Gly Ala Gln Val Arg Met Val Asp Met
 180 185 190

Gln Lys Leu Thr His Gly Val Leu His Thr Lys Phe Trp Val Val Asp
 195 200 205

Gln Thr His Phe Tyr Leu Gly Ser Ala Asn Met Asp Trp Arg Ser Leu
 210 215 220

Thr Gln Val Lys Glu Leu Gly Val Val Met Tyr Asn Cys Ser Cys Leu
 225 230 235 240

Ala Arg Asp Leu Thr Lys Ile Phe Glu Ala Tyr Trp Phe Leu Gly Gln
 245 250 255

Ala Gly Ser Ser Ile Pro Ser Thr Trp Pro Arg Phe Tyr Asp Thr Arg
 260 265 270

Tyr Asn Gln Glu Thr Pro Met Glu Ile Cys Leu Asn Gly Thr Pro Ala
 275 280 285

Leu Ala Tyr Leu Ala Ser Ala Pro Pro Pro Leu Cys Pro Ser Gly Arg
 290 295 300

Thr Pro Asp Leu Lys Ala Leu Leu Asn Val Val Asp Asn Ala Arg Ser
 305 310 315 320

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Phe Ile Tyr Val Ala Val Met Asn Tyr Leu Pro Thr Leu Glu Phe Ser
325 330 335

His Pro His Arg Phe Trp Pro Ala Ile Asp Asp Gly Leu Arg Arg Ala
340 345 350

Thr Tyr Glu Arg Gly Val Lys Val Arg Leu Leu Ile Ser Cys Trp Gly
355 360 365

His Ser Glu Pro Ser Met Arg Ala Phe Leu Leu Ser Leu Ala Ala Leu
370 375 380

Arg Asp Asn His Thr His Ser Asp Ile Gln Val Lys Leu Phe Val Val
385 390 395 400

Pro Ala Asp Glu Ala Gln Ala Arg Ile Pro Tyr Ala Arg Val Asn His
405 410 415

Asn Lys Tyr Met Val Thr Glu Arg Ala Thr Tyr Ile Gly Thr Ser Asn
420 425 430

Trp Ser Gly Asn Tyr Phe Thr Glu Thr Ala Gly Thr Ser Leu Leu Val
435 440 445

Thr Gln Asn Gly Arg Gly Gly Leu Arg Ser Gln Leu Glu Ala Ile Phe
450 455 460

Leu Arg Asp Trp Asp Ser Pro Tyr Ser His Asp Leu Asp Thr Ser Ala
465 470 475 480

Asp Ser Val Gly Asn Ala Cys Arg Leu Leu
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<210> 7
<211> 1467
<212> DNA
<213> Rattus rattus

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Met Lys Pro Lys Leu Met Tyr Gln Glu Leu Lys Val Pro Val Glu Glu
1 5 10 15

48

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cct gcg gga gaa ctg ccc atg aat gaa atc gag gca tgg aag gca gca	96
Pro Ala Gly Glu Leu Pro Met Asn Glu Ile Glu Ala Trp Lys Ala Ala	
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gag aag aaa gcc cgt tgg gtc ctc ctt gtc ctt atc ctg gcg gta gtg	144
Glu Lys Lys Ala Arg Trp Val Leu Leu Val Leu Ile Leu Ala Val Val	
35 40 45	
ggc ttc ggt gcc ctg atg act cag ctg ttt cta tgg gaa tac ggg gac	192
Gly Phe Gly Ala Leu Met Thr Gln Leu Phe Leu Trp Glu Tyr Gly Asp	
50 55 60	
tta cat cta ttt ggc ccg aat cag cac cca gcc ccc tgc tat gac ccc	240
Leu His Leu Phe Gly Pro Asn Gln His Pro Ala Pro Cys Tyr Asp Pro	
65 70 75 80	
tgc gag gcg gtg ctg gtg gag agc att ccc gag ggg ctg gag ttt ccc	288
Cys Glu Ala Val Leu Val Glu Ser Ile Pro Glu Gly Leu Glu Phe Pro	
85 90 95	
aat gcc acc aca agc aac ccc tcc acc agc cag gcc tgg ttg ggc ctc	336
Asn Ala Thr Thr Ser Asn Pro Ser Thr Ser Gln Ala Trp Leu Gly Leu	
100 105 110	
ctt gcc ggt gct cac agc agc ctg gac atc gcg tcc ttc tac tgg act	384
Leu Ala Gly Ala His Ser Ser Leu Asp Ile Ala Ser Phe Tyr Trp Thr	
115 120 125	
ctc aca aac aat gat acc cac acg caa gag ccc tct gcc cag cag ggt	432
Leu Thr Asn Asn Asp Thr His Thr Gln Glu Pro Ser Ala Gln Gln Gly	
130 135 140	
gaa gag gtt ctt cag cag ctt cag gct ctg gca cct cga ggt gta aag	480
Glu Glu Val Leu Gln Gln Leu Gln Ala Leu Ala Pro Arg Gly Val Lys	
145 150 155 160	
gtt cgc atc gct gtg agc aaa ccc aac gga cct ctg gct gat ctg cag	528
Val Arg Ile Ala Val Ser Lys Pro Asn Gly Pro Leu Ala Asp Leu Gln	
165 170 175	
tct ctg cta cag agt ggt gcc cag gtg cgc atg gtg gac atg cag aag	576
Ser Leu Leu Gln Ser Gly Ala Gln Val Arg Met Val Asp Met Gln Lys	
180 185 190	
ctg acc cat ggt gtc ctg cac acc aag ttc tgg gtg gtg gac cag acc	624
Leu Thr His Gly Val Leu His Thr Lys Phe Trp Val Val Asp Gln Thr	
195 200 205	
cac ttt tac ctg ggc agt gcc aac atg gac tgg cga tcg ctg acc cag	672
His Phe Tyr Leu Gly Ser Ala Asn Met Asp Trp Arg Ser Leu Thr Gln	
210 215 220	
gtc aag gag ctg ggc gtg gtc atg tac aac tgc agc tgc ctg gct cgc	720
Val Lys Glu Leu Gly Val Val Met Tyr Asn Cys Ser Cys Leu Ala Arg	
225 230 235 240	
gac ctc acc aag att ttt gaa gcc tat tgg ttc ctg ggc cag gca ggc	768
Asp Leu Thr Lys Ile Phe Glu Ala Tyr Trp Phe Leu Gly Gln Ala Gly	

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245										250					255					
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caa	gaa	aca	ccg	atg	gag	atc	tgc	ctc	aat	ggc	acc	cca	gcc	ctg	gcc	864				
Gln	Glu	Thr	Pro	Met	Glu	Ile	Cys	Leu	Asn	Gly	Thr	Pro	Ala	Leu	Ala					
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Tyr	Leu	Ala	Ser	Ala	Pro	Pro	Pro	Leu	Cys	Pro	Gly	Gly	Arg	Thr	Pro					
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Tyr	Ile	Ala	Val	Met	Asn	Tyr	Leu	Pro	Thr	Met	Glu	Phe	Ser	His	Pro					
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cgc	agg	ttc	tgg	cca	gcg	att	gat	gat	ggg	cta	aga	cgg	gct	gcg	tat	1056				
Arg	Arg	Phe	Trp	Pro	Ala	Ile	Asp	Asp	Gly	Leu	Arg	Arg	Ala	Ala	Tyr					
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gaa	cga	ggc	gtc	aaa	gtg	cgt	ttg	ctc	atc	agc	tgc	tgg	gga	cac	tcc	1104				
Glu	Arg	Gly	Val	Lys	Val	Arg	Leu	Leu	Ile	Ser	Cys	Trp	Gly	His	Ser					
		355					360					365								
gag	cca	tcc	atg	cgg	tcc	ttc	ctg	ctc	tcc	ctg	gct	gcc	ctt	cgt	gac	1152				
Glu	Pro	Ser	Met	Arg	Ser	Phe	Leu	Leu	Ser	Leu	Ala	Ala	Leu	Arg	Asp					
	370					375					380									
aac	cat	acc	cac	tct	gac	atc	cag	gtg	aaa	ctg	ttt	gtg	gtc	cct	gcg	1200				
Asn	His	Thr	His	Ser	Asp	Ile	Gln	Val	Lys	Leu	Phe	Val	Val	Pro	Ala					
385					390				395						400					
gat	gag	gcc	caa	gct	cga	atc	ccc	tat	gcc	cgc	gtc	aac	cac	aac	aag	1248				
Asp	Glu	Ala	Gln	Ala	Arg	Ile	Pro	Tyr	Ala	Arg	Val	Asn	His	Asn	Lys					
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tac	atg	gtg	act	gaa	cgc	acc	aca	tac	att	gga	acc	tcc	aac	tgg	tct	1296				
Tyr	Met	Val	Thr	Glu	Arg	Thr	Thr	Tyr	Ile	Gly	Thr	Ser	Asn	Trp	Ser					
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gga	agc	tac	ttc	aca	gag	acg	gca	ggc	acc	tcc	ctg	ctg	gtg	aca	cag	1344				
Gly	Ser	Tyr	Phe	Thr	Glu	Thr	Ala	Gly	Thr	Ser	Leu	Leu	Val	Thr	Gln					
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aac	ggg	cac	ggg	ggc	ttg	cgc	agc	cag	ctg	gag	gct	gtt	ttc	ctg	aga	1392				
Asn	Gly	His	Gly	Gly	Leu	Arg	Ser	Gln	Leu	Glu	Ala	Val	Phe	Leu	Arg					
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gac	tgg	gaa	tcc	cca	tac	agc	cac	aac	ctt	gac	acc	tca	gcc	gac	agt	1440				
Asp	Trp	Glu	Ser	Pro	Tyr	Ser	His	Asn	Leu	Asp	Thr	Ser	Ala	Asp	Ser					
465					470					475					480					
gtg	ggc	aat	gcc	tgc	cgc	ctg	ctt	tga								1467				

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Val Gly Asn Ala Cys Arg Leu Leu
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<210> 8
<211> 488
<212> PRT
<213> Rattus rattus

<400> 8

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Pro Ala Gly Glu Leu Pro Met Asn Glu Ile Glu Ala Trp Lys Ala Ala
20 25 30

Glu Lys Lys Ala Arg Trp Val Leu Leu Val Leu Ile Leu Ala Val Val
35 40 45

Gly Phe Gly Ala Leu Met Thr Gln Leu Phe Leu Trp Glu Tyr Gly Asp
50 55 60

Leu His Leu Phe Gly Pro Asn Gln His Pro Ala Pro Cys Tyr Asp Pro
65 70 75 80

Cys Glu Ala Val Leu Val Glu Ser Ile Pro Glu Gly Leu Glu Phe Pro
85 90 95

Asn Ala Thr Thr Ser Asn Pro Ser Thr Ser Gln Ala Trp Leu Gly Leu
100 105 110

Leu Ala Gly Ala His Ser Ser Leu Asp Ile Ala Ser Phe Tyr Trp Thr
115 120 125

Leu Thr Asn Asn Asp Thr His Thr Gln Glu Pro Ser Ala Gln Gln Gly
130 135 140

Glu Glu Val Leu Gln Gln Leu Gln Ala Leu Ala Pro Arg Gly Val Lys
145 150 155 160

Val Arg Ile Ala Val Ser Lys Pro Asn Gly Pro Leu Ala Asp Leu Gln
165 170 175

Ser Leu Leu Gln Ser Gly Ala Gln Val Arg Met Val Asp Met Gln Lys
180 185 190

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Leu Thr His Gly Val Leu His Thr Lys Phe Trp Val Val Asp Gln Thr
 195 200 205

His Phe Tyr Leu Gly Ser Ala Asn Met Asp Trp Arg Ser Leu Thr Gln
 210 215 220

Val Lys Glu Leu Gly Val Val Met Tyr Asn Cys Ser Cys Leu Ala Arg
 225 230 235 240

Asp Leu Thr Lys Ile Phe Glu Ala Tyr Trp Phe Leu Gly Gln Ala Gly
 245 250 255

Ser Ser Ile Pro Ser Thr Trp Pro Arg Pro Phe Asp Thr Arg Tyr Asn
 260 265 270

Gln Glu Thr Pro Met Glu Ile Cys Leu Asn Gly Thr Pro Ala Leu Ala
 275 280 285

Tyr Leu Ala Ser Ala Pro Pro Pro Leu Cys Pro Gly Gly Arg Thr Pro
 290 295 300

Asp Leu Lys Ala Leu Leu Ser Val Val Asp Asn Ala Arg Ser Phe Ile
 305 310 315 320

Tyr Ile Ala Val Met Asn Tyr Leu Pro Thr Met Glu Phe Ser His Pro
 325 330 335

Arg Arg Phe Trp Pro Ala Ile Asp Asp Gly Leu Arg Arg Ala Ala Tyr
 340 345 350

Glu Arg Gly Val Lys Val Arg Leu Leu Ile Ser Cys Trp Gly His Ser
 355 360 365

Glu Pro Ser Met Arg Ser Phe Leu Leu Ser Leu Ala Ala Leu Arg Asp
 370 375 380

Asn His Thr His Ser Asp Ile Gln Val Lys Leu Phe Val Val Pro Ala
 385 390 395 400

Asp Glu Ala Gln Ala Arg Ile Pro Tyr Ala Arg Val Asn His Asn Lys
 405 410 415

Tyr Met Val Thr Glu Arg Thr Thr Tyr Ile Gly Thr Ser Asn Trp Ser
 420 425 430

133-PCT1-US1.ST25.txt

Gly Ser Tyr Phe Thr Glu Thr Ala Gly Thr Ser Leu Leu Val Thr Gln
 435 440 445

Asn Gly His Gly Gly Leu Arg Ser Gln Leu Glu Ala Val Phe Leu Arg
 450 455 460

Asp Trp Glu Ser Pro Tyr Ser His Asn Leu Asp Thr Ser Ala Asp Ser
 465 470 475 480

Val Gly Asn Ala Cys Arg Leu Leu
 485